

Appl. No. 10/057,822
Amdt. Dated October 28, 2005
Reply to Office Action of June 6, 2005

Attorney Docket No. 83384.0001
Customer No.: 26021

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended): A metal ~~ex-semimetal~~ film wherein an arithmetic mean roughness of the surface is not larger than 2 nm and a (111) peak intensity of X-ray diffraction is not less than 20 times the sum of other peaks.
2. (Currently amended): The metal ~~ex-semimetal~~ film according to claim 1, wherein a difference in the reflectivity from a theoretical value of a pure metal ~~ex-semimetal~~ is 0.2% or less in a visible light region.
3. (Currently amended): The metal ~~ex-semimetal~~ film according to claim 2, wherein variations in the reflectivity is 0.5% or less in a range of incident angles of light from 10 to 50°.
4. (Currently amended): The metal ~~ex-semimetal~~ film according to claim 1, wherein a difference in the reflectivity from a theoretical value of a pure metal ~~ex-semimetal~~ is 0.2% or less in a range of wavelengths of light from 250 to 400 nm.
5. (Currently amended): The metal ~~ex-semimetal~~ film according to claim 1, which is made of at least a metal ~~ex-semimetal~~ selected from the group consisting of Ag, Cu, Au, Pt, Al, Ti, Cr, Ni, Fe, W, and Zn and Si.
6. (Currently amended): A metal ~~ex-semimetal~~ film-coated member comprising a substrate and the metal ~~ex-semimetal~~ film of any one of claims 1 to 5 formed on the substrate.

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7. (Currently amended): The metal ~~or-semimetal~~ film-coated member according to claim 6, wherein an anti-reflection film comprising a plurality of dielectric material layers is formed on the surface of the metal ~~or-semimetal~~ film.

8. (Currently amended): The metal ~~or-semimetal~~ film-coated member according to claim 6, wherein the substrate is made of glass, ceramics, semiconductor material, metallic material or plastic.

9. (Currently amended): A metal ~~or-semimetal~~ formed by a thin film forming method of depositing a material of a thin film turned into plasma on the surface of a substrate that is maintained at a temperature not higher than 100°C, wherein an arithmetic mean roughness of the surface is 2 nm or less and a (111) peak intensity of X-ray diffraction is not less than 20 times the sum of other peaks.

10. (Currently amended): The metal ~~or-semimetal~~ film according to claim 9, which is formed in the condition that a temperature of the substrate is not higher than 80°C.

11. (Currently amended): The metal ~~or-semimetal~~ film according to claim 9, wherein a difference in the reflectivity from a theoretical value of a pure metal ~~or-semimetal~~ is 0.2% or less in a visible light region.

12. (Currently amended): The metal ~~or-semimetal~~ film according to claim 11, wherein variations in the reflectivity is within 0.5% in a range of incident angles of light from 10 to 50°.

13. (Currently amended): The metal ~~or-semimetal~~ according to claim 9, wherein a difference in the reflectivity from a theoretical value of a pure metal ~~or-semimetal~~ is 0.2% or less in a range of wavelengths of light from 250 to 400 nm.

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14. (Currently amended): The metal ~~or semimetal~~ film according to claim 9, which is made of at least a metal ~~or semimetal~~ selected from the group consisting of Ag, Cu, Au, Pt, Al, Ti, Cr, Ni, Fe, W, and Zn ~~and Si~~.

15-18. (Canceled)

19. (Currently amended): An optical coating film comprising a metal ~~or semimetal~~ film that has an arithmetic mean roughness of the surface being 2 nm or less and a (111) peak intensity of X-ray diffraction not less than 20 times the sum of other peaks, wherein a difference in the reflectivity from the theoretical value of the pure metal ~~or semimetal~~ is 0.2% or less in the visible light region.

20. (Original): The optical coating film according to claim 19, wherein variations in the reflectivity is 0.5% or less in a range of incident angles of light from 10 to 50°.

21. (Currently amended): An optical coating film comprising a metal ~~or semimetal~~ film that has an arithmetic mean roughness of the surface being 2 nm or less and a (111) peak intensity of X-ray diffraction not less than 20 times the sum of other peaks, wherein a difference in the reflectivity from the theoretical value of the pure metal ~~or semimetal~~ is 0.2% or less in a range of wavelengths of light from 250 to 400 nm.

22. (Currently amended): The optical coating film according to claim 19 or 21, wherein the metal ~~or semimetal~~ film is made of silver or aluminum.

23-56. (Canceled)

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57. (Original): A reflector mirror comprising, as a reflection layer, a silver film which has an arithmetic mean roughness of the surface being 3 nm or less and a (111) peak intensity of X-ray diffraction not less than 20 times the sum of other peaks.

58. (Original): An image projector apparatus, wherein the reflector mirror of claim 57 is provided.

59. (Original): The image projector according to claim 58, comprising a light source, a color separator for separating light from the light source into a plurality of chromatic lights, a light modulator for modulating each chromatic light separated by the color separator, a chromatic light synthesizer that synthesizes each chromatic light modulated by the light modulator to form image light, and a projection lens that projects the light image from the chromatic light synthesizer onto a screen, wherein the reflector mirror is disposed in the optical path from the light source to the projection lens.

60. (New): A Si film wherein an arithmetic mean roughness of the surface is not larger than 2 nm and a (111) peak intensity of X-ray diffraction is not less than 20 times the sum of other peaks.

61. (New): A Si film-coated member comprising a substrate and the Si film of claim 60 formed on the substrate.

62. (New): The Si film-coated member according to claim 61, wherein an anti-reflection film comprising a plurality of dielectric material layers is formed on the surface of the Si film.

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63. (New): The Si film-coated member according to claim 61, wherein the substrate is made of glass, ceramics, semiconductor material, metallic material or plastic.

64. (New): Si formed by a thin film forming method of depositing a material of a thin film turned into plasma on the surface of a substrate that is maintained at a temperature not higher than 100°C, wherein an arithmetic mean roughness of the surface is 2 nm or less and a (111) peak intensity of X-ray diffraction is not less than 20 times the sum of other peaks.